## REMARKS

A one-month extension of time is hereby requested so that the period for response will expire on April 17, 2002.

A new Abstract page is attached hereto, as requested by the Examiner.

The various Section 112, second paragraph, grounds of rejection should be removed for the reasons that follow:

- The claim amendments that the Examiner has suggested in sections 4 A) and B) on page 2 of the Office Action have been made.
- In regard to section 4 C), Claim 1 has been amended to provide antecedent basis for the recitation ''peroxide'' and Claim 3 has been amended to delete the term ''peroxides'' from the Markush group.
- The ''preferably'' recitations have been deleted and have been made the subject of appropriate new dependent Claims in response to the rejection recited in section 4 D).
- In regard to section 4 E), Claim 1 has been amended to provide antecedent basis for the recitation ''peroxide''.
- The term ''viscosity of 10-300 mPa·s'' refers to the particular viscosity values of the recited emulsion and, moreover, gives the actual values in one of the accepted units of measure (MPa·s). A search in the United States Patent and Trademark Office's full text patent database for the dimensional term ''MPa·s'' in the claims field (''ACLM/'' obtained a total of 798 hits (copy of first two

pages attached), thereby demonstrating the wide spread and accepted usage of this dimensional term. It is deemed that the person of ordinary skill in the art knows ways to obtain such viscosity measurements in MPa.s units, thereby making the recited term properly definite under Section 112.

- The ''obtainable'' language has been changed to 'obtained by'' language and it is requested that this terminology be accepted.

The use claim (Claim 11) has been redrafted in process claim language and its acceptance is requested.

The Section 103 rejection that appears at pages 4-6 of the Office Action is respectfully traversed for the reasons that follow:

The Examiner is correct in saying that EP 492,712 does not disclose ethoxylated fatty alcohols as part of an emulsifier system. Additionally, it must be noted that the inventors have recognized that the emulsion as disclosed in this European patent citation is far from optimal since only methanol can be used as an antifreeze, various physical properties cannot be balanced properly, and it may be unsafe (see p.1, lines 11-30 of this citation).

The present invention aims to provide an improved peroxide emulsion, which overcomes the above disadvantages. In order to achieve this goal, a peroxide emulsion is provided which comprises a copolymer of an alpha, beta-unsaturated dicarboxylic acid and a $C_{8-24}$ alpha-olefin, and an ethoxylated fatty alcohol. Hereinafter, we will consider the proposed combination of this European patent citation with other cited documents separately disclosing the ethoxylated fatty alcohol.

**Combining the European Patent Citation and WO 98/18835 ("PCT")**

The European patent citation discloses a peroxide emulsion comprising a copolymer of an alpha, beta-unsaturated dicarboxylic acid and a $C_{8-24}$ alpha-olefin, and a second copolymer of at least one polyalkylene and a polysiloxane. The PCT secondary reference discloses a peroxide emulsion comprising one or more polyvinyl alcohols and one or more emulsifiers, which may be an ethoxylated fatty alcohol. If the person of ordinary skill in the art were to combine the teachings of these two citations, he or she would wind up with a peroxide emulsion comprising all four above-mentioned components. In order to come to the present invention, the skilled artisan would have to specifically choose between the copolymer and the second copolymer of D1 and between the polyvinyl alcohol and the ethoxylated fatty alcohol of D2. Neither D1 nor D2 gives any direct reference or suggestion to help the skilled artisan with this choice.

As a final matter, it must be noted that the European patent citation does not refer to the PCT citation, as opposed to the PCT citation, which does refer to the European patent publication. The PCT patent publication indicates that the teachings of the European patent publication generally do not lead to an acceptable formulation of polyvinyl chloride, thus indicating that the person of ordinary sill in the art, when looking at the European patent publication document would be looking in the wrong direction for guidance. Consequently, that person is not pushed or even directed towards the Examiner's proposed combination of these two documents in any way.

As argued above, it is not obvious to combine the European patent publication and the PCT patent publication, and even if one does so, the person of ordinary skill in the art would not arrive at

the present invention without the exercise of an inventive step.

Combining the European Patent Citation and US 4,547,481 (Lundin) (or the Divisional Thereof (US 4,499,250)

Lundin discloses a peroxide emulsion comprising an ethoxylated fatty alcohol. Analogous to the combination of the European patent citation and the PCT patent publication, if one combines the European patent citation and Lundin, the peroxide emulsion would comprise three components, which is dissimilar to the composition of the present invention.

Furthermore, the European patent citation and Lundin do not refer to each other, nor do they teach or indicate to combine both teachings.

The person of ordinary skill in the art would not therefore have the present invention suggested to them in view of these two cited references.

US 4,734,135 (Satomi)

If, as the Examiner suggests, the teachings of Satomi were to be incorporated into the European patent citation and that citation is then combined with the subject matter of the PCT patent publication, the person of ordinary skill in the art would not arrive at the present invention since he or she would wind up with a peroxide emulsion comprising four components (see the argument made earlier on this issue). In order to arrive at the present invention, the person of ordinary skill in the art would have to specifically choose between the copolymer and the second copolymer of the European patent

citation and the polyvinyl alcohol and the ethoxylated fatty alcohol of the PCT patent publication. However, neither the European patent citation nor the PCT patent publication gives any direct reference or suggestion to help the person of ordinary skill in the art with making such a choice.

Following the same reasoning, if the person of ordinary skill in the art were to combine the European patent publication (including Satomi) and Lundin, he or she would wind up with a three-component peroxide emulsion from which he or she must then specifically choose the components of the present invention.

Therefore, the person of ordinary skill in the art would not arrive at the present invention when combining the teachings of the European patent publication (including Satomi) and the PCT patent publication or Lundin without the use of inventive skill.

As argued above, the person of ordinary skill in the art would not have had the present invention suggested to him or her based on the cited art. Claims 1-12 are therefore considered to be in proper and allowable form as presented herewith.

Respectfully submitted,

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## COPY OF MARKED UP COPY OF CLAIM

1. An aqueous [Aqueous] peroxide emulsion, comprising a peroxide and optionally containing anti-freeze and/or further additives, which contains a specific emulsifier system comprising a copolymer of an α,β-unsaturated dicarboxylic acid and a $C_{8-24}$ α-olefin the acid groups of which are esterified with an ethoxylated alcohol having a degree of ethoxylation of 1-45, characterized in that the emulsifier system further comprises an ethoxylated fatty alcohol with an HLB-value greater than 16.

2. The emulsion [Emulsion] according to claim 1 wherein the emulsifier system consists essentially of the copolymer of an α,β-unsaturated dicarboxylic acid and a $C_{8-24}$ α-olefin the acid groups of which are esterified with an ethoxylated alcohol having a degree of ethoxylation of 1-45 and the ethoxylated fatty alcohol.

3. The emulsion [Emulsion] according to claim 1 wherein the peroxide is selected from the group consisting of peroxyesters, peroxydicarbonates, peroxycarbonates, diacyl peroxides, [peroxides,] and combinations thereof, and in which said peroxide is present in an amount of 30-70% by weight, based on the weight of the emulsion.

4. The emulsion [Emulsion] according to claim 3 comprising one or more peroxides which require refrigerated storage and are present in an amount of 40-65% by weight, [preferably 50-65% by weight,] based on the weight of the emulsion.

5. The emulsion [Emulsion] according to claim 4 further comprising an anti-freeze selected from the group consisting of

methanol, ethanol, isopropanol, ethylene glycol, propylene glycol, and glycerol.

6. The emulsion [Emulsion] according to any one of the claims 1-5 wherein the copolymer is present in an amount of 0.05 to 20% by weight and the ethoxylated fatty alcohol is present in an amount of 0.02-15% by weight, while the total weight of both compounds is at least 0.5% by weight, all based on the weight of the peroxide in said emulsion.

7. The emulsion [Emulsion] according to claim 6 wherein the copolymer is present in an amount of 0.1-15% by weight, [preferably 0.2-10% by weight,] based on the weight of the peroxide.

8. The emulsion [Emulsion] according to any one of claims 1-5 wherein the HLB value of the ethoxylated fatty alcohol is greater than 16.5[, preferably greater than 17.0].

9. The emulsion [Emulsion] according to any one of claims 1-5 wherein the droplet size of the emulsion, when measured using a Malvern Easy Size, is characterized by a d50 of 0.1-2.0 µm and a d99 of 0.5-9.0 µm.

10. The emulsion [Emulsion] according to any one of claims 1-5 with a viscosity of 10-300 mPs.

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11. [Use of an] A polymerisation process comprising the polymerization of a monomer in the presence of an emulsion according to any one of claims 1-5 or a polymerisation modification process comprising treating a polymer with an emulsion according to any one

of claims 1-5 [in a polymerization or polymer modification reaction, preferably a reaction involving the polymerization of at least vinyl chloride].

12. Polyvinyl chloride [obtainable] obtained by a process involving the reaction of at least vinyl chloride monomer and a peroxide that was used in the form of an emulsion according to any one of claims 1-5.

# AQUEOUS PEROXIDE EMULSIONS

## Abstract

The invention relates to aqueous peroxide emulsions, optionally containing anti-freeze and/or further additives, which contain a specific emulsifier system comprising a copolymer of an α,β-unsaturated dicarboxylic acid and a $C_{8-24}$ α-olefin the acid groups of which are esterified with an ethoxylated alcohol having a degree of ethoxylation of 1-45, as well as an ethoxylated fatty alcohol with an HLB-value greater than 16.

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Refine Search ACLM/"MPa.s"

| | PAT. NO. | Title |
|---|---|---|
| 1 | 6,364,925 | Polyurethane encapsulated fertilizer having improved slow-release properties |
| 2 | 6,359,026 | Method for producing silicone foams |
| 3 | 6,350,835 | Emulsions of peroxyesters |
| 4 | 6,350,811 | Aqueous polyurethane dispersions containing phenolic resin moieties |
| 5 | 6,348,537 | Coating agent, and resin molded article having coated layer |
| 6 | 6,344,205 | Anhydrous composition, cosmetic, pharmaceutical or hygiene use |
| 7 | 6,342,577 | Thermosetting resin compositions useful as underfill sealants |
| 8 | 6,342,245 | Compositions of lipid lowering agents |
| 9 | 6,335,375 | Concentrated fluid aqueous-alcoholic compositions of hydrogenated coconut or palm kernel oil alkylamidopropylbetaines |
| 10 | 6,335,370 | Fluid concentrated hydroalcoholic compositions of copra or oil palm alkyl-amidopropylbetains |
| 11 | 6,333,362 | Pressurized device comprising an ultrafine foaming oil-in-water emulsion and use of this emulsion in cleansing and care of skin |
| 12 | 6,329,452 | Polyurethanes and elastane fibres finished to render them antistatic |
| 13 | 6,326,452 | Method for preparing polyorganosiloxanes by hydrolyzing organohalosilanes |
| 14 | 6,326,082 | Security document comprising a mixture of polyurethanes |
| 15 | 6,319,981 | Coating compounds, a process for their production and their use for the production of coatings |
| 16 | 6,316,171 | Aqueous developer for lithographic printing plates |
| 17 | 6,314,668 | Household appliance and cassette with disincrustant means, and disincrustant method in a household appliance |
| 18 | 6,310,157 | Anionic water soluble polymer made by reverse phase emulsion polymerization |
| 19 | 6,310,115 | Ink compositions for ink jet printing |
| 20 | 6,309,577 | Process for casting and waterproofing of elements cast in concrete, mortar, cement, by using a silicone resin |

21 6,306,504 Polycarbonate molded articles coated with UV-curable compositions
22 6,303,175 Gelled foodstuff for aquatic animals
23 6,302,610 Direct-feed type writing implement
24 6,302,290 Container sealing assembly
25 6,300,024 Toner, two-component type developer, heat fixing method, image forming method and apparatus unit
26 6,297,342 Method and mixing head for producing a reaction mixture from an isocyanate and a higher-viscous polyol formulation
27 6,296,873 Zero-order sustained release delivery system for carbamazephine derivatives
28 6,293,402 Sachet with increased content quantity
29 6,288,152 Room-temperature curable silicon rubber composition
30 6,288,015 Multiphase cleaning composition containing lignin sulfonate
31 6,287,741 Liquid toner composition
32 6,280,762 Center filled confectionery
33 6,278,824 Optical cable with filling material comprising an internal olefin oligomer
34 6,276,860 Liquid applicator
35 6,270,799 Medicament formulation with a controlled release of an active agent
36 6,267,812 Aqueous dispersion of pigment(s) and/or filler(s) containing a particular saccharide composition
37 6,265,030 Method of producing a dehumidifying element
38 6,264,989 Spherical single-substance particles, medicines and foodstuffs containing the particles, and method of production thereof
39 6,262,205 Radical-polymerizable multicomponent mixtures storable in the absence of air and their use
40 6,261,543 Antiperspirant compositions
41 6,261,353 Recording material and image forming method using the same
42 6,261,352 Water-based ball-point pen ink composition
43 6,258,404 Method and device for coating a wireframe element with a fine liquid deposit and coated optical fiber
44 6,251,875 Aqueous laxative syrup comprising lactulose and lactitol and/or maltitol
45 6,250,554 Chip card comprising an imaged-receiving layer
46 6,248,880 Nonionic cellulose ether with improve thickening properties
47 6,245,926 Preparation of alkylmonohydrogenohalogenosilanes by redistribution followed by distillation and associated device
48 6,238,656 Cosmetic raw materials, cosmetic products, and methods of manufacturing cosmetic products
49 6,235,848 Crosslinkable molding material
50 6,232,360 UV-curable coating compositions and their use for coating polycarbonate molded articles